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OHIO POTATO CULTIVAR TRIALS

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INTRODUCTION

Over 60 potato varieties and advanced selections were evaluated in trials across Ohio in 1982 (see Appendix Table A1). These trials included: 1) a Statewide Trial of 10 entries located on 6 commercial farms, 2) an Observation Trial of many newer entries located on two of the 6 commercial farms, 3) a trial of 10 entries at the OARDC Muck Crops Branch at Celeryville, 4) an evaluation of 13 entries in the North Central Regional Potato Trials located at the OARDC campus at Wooster, 5) an evaluation of 18 entries in the Northeastern Regional Potato Variety Trials located at the OARDC campus at Wooster, and 6) a trial of 11 entries at the Campbell Institute at Napoleon, Ohio.

STATEWIDE TRIAL

Introduction

Ten entries were evaluated at 6 commercial farms located across the state. Eight of the entries (Rosa, Neb. A129.69-1, W 718, Denali, NY 59, Jemseg, Belchip, and Russette) were included because they have looked promising in previous years, and the other two entries (Norchip and Katahdin) were included as standards. Katahdin was included for comparison as a standard midseason variety, and Norchip was included as a standard for comparison of chipping potential.

Procedure

All plots on the 6 commercial farms were subjected to standard cultural and pest control practices used on those farms (Appendix Table A2). Plots consisted of double rows approximately 40 feet long (80 seedpieces) and entries were replicated four times. Stand, vigor, and disease were evaluated at certain farms during the growing season.

At harvest, tubers were dug, left on the soil surface to dry for approximately 30 minutes, and were picked up by hand and weighed for total yield. A 50 pound sample was randomly selected from each plot for grading. A sample of graded tubers from each plot was weighed and counted to determine average tuber weight. Ten of the largest tubers from each plot were cut and evaluated for hollow heart and internal necrosis. A 15-pound subsample of U.S. No. 1 potatoes was collected from every plot and transported to the Horticulture Pilot Plant at Ohio State University for determination of specific gravity and chipping potential both from the field and from storage.

A soil sample was also taken after harvest from the plots. Data was not available at time of publication, but can be obtained by interested parties by contacting the senior author.

Results

Each entry will be discussed as to yield, tuber grade and defects, and any other pertinent information (Refer to Tables 1-7).

NY 59 ranked first with an average yield of 388 cwt/A of U.S. No. 1 potatoes for the six farms. It had the second best stand at 90.1%. Tubers had the highest percentage of internal necrosis of all cultivars. NY 59 has had very high yields for several years in the Ohio Trials. However, it also usually leads in the amount

of internal necrosis compared to other cultivars. This seems to be a major weakness that will prevent this cultivar from being grown commercially in Ohio.

W 718 ranked second with an average yield of 373 cwt/A of U.S. No. 1 potatoes for the six farms. It had the best grade out with 92.5% U.S. No. 1. It had a poor stand at 80.7%. W 718 tubers had a small amount of hollow heart and a moderate amount of internal necrosis. W 718 has had above-average yields in over 8 years of testing. It has a slight tendency to hollow heart. It does not chip well but could be a very good potato for fresh market in Ohio if Wisconsin researchers would name and release it.

Katahdin ranked third with an average yield of 341 cwt/A of U.S. No. 1 potatoes for the six farms. It had the best stand at 90.3% and the third best grade out at 91.2% U.S. No. 1.

Rosa ranked fourth with an average yield of 337 cwt/A of U.S. No. 1 potatoes for the six farms. It had a poor grade out of 84.9% U.S. No. 1 with the highest percentage of B-size tubers, 7%, and the third highest percentage of culls, 8.1%. Tubers had less than 1% hollow heart or internal necrosis. Rosa is a round white potato with splashes of light red skin around the eyes.

Neb. A129.69-1 ranked fifth in average yield with 372 cwt/A of U.S. No. 1 potatoes for the six farms. It had a good grade out at 89.8% U.S. No. 1. Tubers had less than 1% hollow heart and internal necrosis. Neb. A129.69-1 tubers have an attractive netted skin. Neb. A129.69-1 led in yield in the Statewide Trials in 1980 and 1981. Tuber quality is excellent as it has always had the lowest amounts of hollow heart and internal necrosis compared to the other cultivars tested. Some tubers were sprouting at harvest in 1981. (It is late maturing and tends to skin at harvest.) It does not chip well, but is a very promising fresh marked cultivar.

Denali ranked sixth in average yield with 311 cwt/A of U.S. No. 1 potatoes for the six farms. It had an average grade out with a high percentage of B-size tubers. The 76.2% stand was poor. Tubers had a small amount of hollow heart. Denali yielded very well in previous Ohio trials. It is quickly becoming a major chipping cultivar in Ohio, since its release in 1978 because of the high specific gravity of its tubers compared to Norchip.

Jemseg ranked seventh in average yield with 300 cwt/A of U.S. No. 1 potatoes for the six farms. It had an average grade out and a poor stand at 81.5%. Tubers had few internal defects. This cultivar may find a place in commercial production in Ohio, since it is a very early maturing cultivar. It has an attractive, slightly netted, tan colored skin.

Russette ranked eighth with an average yield of 284 cwt/A of U.S. No. 1 potatoes for the six farms. This cultivar has oblong tubers with heavily russetted skin. It had a poor stand and the highest amount of hollow heart of the cultivars in the trial. Hollow heart and average yields will limit its use in Ohio.

Norchip ranked ninth with an average yield of 274 cwt/A for the six farms. It had the second lowest grade out with a high percentage of B-size tubers and culls. Tubers had the second highest amount of internal necrosis, 7%.

Belchip ranked tenth with an average yield of 264 cwt/A for the six farms. It had the poorest grade out and the highest percentage of culls, 16.9%. It also had the poorest stand, 66.6%. In previous trials, Belchip tubers have tended to have a rough shape.

Summary

NY 59 produces high yields, but the internal necrosis problem will limit its use in Ohio. W 718 continues to produce above-average yields of attractive tubers. It has a slight tendency to hollow heart, but continues to be a promising fresh-market cultivar. Rosa produces above-average yields in Ohio, but while the red splashes around the eyes of tubers are distinctive, they will probably limit its use in Ohio. Neb. A129.69-1 usually produces high yields of very attractive tubers in Ohio. Tuber quality is excellent. It is a promising fresh-market cultivar. Denali is quickly expanding in commercial production in Ohio because of above-average yields and high tuber specific gravity. Jemseg shows promise as a early maturing fresh-market cultivar in Ohio. Russette and Belchip will probably not gain commercial acceptance in Ohio.

TABLE 1. Average U.S. No. 1 yields, grade, and stands - Statewide Trials, 1982.

Entry	Average Yields Cwt/A	Average Percent U.S. No.1	B Size	Culls	Average % Stand
NY 59	388	92.1	3.8	4.1	90.1
W 718	373	92.5	3.2	4.3	80.7
Katahdin	341	91.2	4.2	4.6	90.3
Rosa	337	84.9	7.0	8.1	84.3
Neb. A129.69-1	327	89.8	4.8	5.4	85.5
Denali	311	87.1	6.4	6.5	76.2
Jemseg	300	89.6	3.4	7.0	81.5
Russette	284	89.6	4.4	6.0	76.5
Norchip	274	82.9	6.5	10.5	84.3
Belchip	264	80.6	2.5	16.9	66.6
Average	320	88.0	4.5	7.4	81.6

TABLE 2. Yield of U.S. No. 1 tubers in cwt/A for each farm - Statewide Trials, 1982. (Rank of yield on each farm in parenthesis)

Farm / Entry	1 B	2 TH	3 M	4 L	5 C	6 TR	Average
NY 59	382 (2)	446 (3)	310 (4)	529 (1)	383 (1)	275 (3)	388 (2.3)
W 718	404 (1)	455 (1)	339 (2)	488 (2)	276 (4)	275 (4)	373 (2.3)
Katahdin	298 (9)	382 (6)	340 (1)	438 (4)	277 (3)	311 (1)	341 (4.0)
Rosa	308 (5)	440 (4)	283 (7)	457 (3)	281 (2)	251 (5)	337 (4.3)
Neb. A129.69-1	374 (3)	413 (5)	273 (8)	395 (5)	272 (5)	235 (6)	327 (5.3)
Denali	303 (7)	447 (2)	299 (5)	361 (6)	233 (6)	220 (8)	311 (5.7)
Jemseg	300 (8)	378 (7)	330 (3)	339 (7)	175 (10)	281 (2)	300 (6.2)
Russette	292 (10)	350 (9)	286 (6)	325 (8)	232 (7)	222 (7)	284 (7.8)
Norchip	330 (4)	371 (8)	211 (10)	311 (9)	212 (9)	206 (10)	274 (8.3)
Belchip	308 (6)	348 (10)	228 (9)	264 (10)	223 (8)	212 (9)	264 (8.7)
Average	330	403	290	391	257	249	320

TABLE 3. Percent U.S. No. 1 for each farm. Statewide Trial-1982.

Farm	1	2	3	4	5	6	
Entry	B	TH	M	L	C	TR	Average
NY 59	93.4	90.7	90.8	92.4	93.8	91.1	92.0
W 718	94.9	93.2	90.0	95.6	89.9	91.4	92.5
Katahdin	86.4	90.8	90.7	95.5	91.0	93.0	91.2
Rosa	82.0	86.3	82.8	88.7	85.0	84.2	84.9
Neb. A129.69-1	91.8	89.9	87.6	90.8	89.6	89.0	89.8
Denali	83.7	89.8	86.5	89.5	85.6	87.6	87.1
Jemseg	85.0	94.4	87.1	95.2	87.4	88.4	89.6
Russette	88.0	90.2	89.0	89.6	91.3	89.2	89.6
Norchip	83.0	85.9	73.9	87.0	84.8	82.8	82.9
Belchip	83.2	84.2	78.5	63.6	86.7	87.5	80.6
Average	87.1	89.5	85.7	88.8	88.5	88.4	88.0

TABLE 4. Percent B-size tubers for each farm. Statewide Trial-1982.

Farm	1	2	3	4	5	6	
Entry	B	TH	M	L	C	TR	Average
NY 59	3.2	3.0	4.9	2.7	3.4	6.0	3.8
W 718	1.2	2.3	4.7	2.9	4.2	3.7	3.2
Katahdin	4.1	3.6	6.4	2.4	4.0	4.7	4.2
Rosa	4.0	4.4	6.6	6.8	10.8	9.7	7.0
Neb. A129.69-1	3.8	3.2	5.0	4.8	6.6	5.4	4.8
Denali	4.3	3.8	9.3	4.6	9.0	7.4	6.4
Jemseg	2.2	2.0	3.4	2.5	5.8	4.4	3.4
Russette	3.6	3.2	4.2	5.4	5.2	4.8	4.4
Norchip	3.5	3.4	7.8	5.9	8.9	9.6	6.5
Belchip	2.2	1.5	3.5	1.8	2.9	2.9	2.5
Average	3.2	3.0	5.6	4.0	6.1	5.9	4.6

TABLE 5. Percent culls for each farm. Statewide Trials-1982.

Farm	1	2	3	4	5	6	
Entry	B	TH	M	L	C	TR	Average
NY 59	3.4	6.2	4.4	4.8	2.8	2.9	4.1
W 718	3.9	4.5	5.3	1.5	6.0	4.8	4.3
Katahdin	9.5	5.8	2.9	2.0	5.0	2.3	4.6
Rosa	13.9	9.2	10.6	4.4	4.2	6.1	8.1
Neb. A129.69-1	4.5	6.8	7.4	4.5	3.8	5.6	5.4
Denali	12.0	6.4	4.2	5.8	5.4	5.0	6.5
Jemseg	12.8	3.6	9.5	2.2	6.7	7.1	7.0
Russette	8.4	6.4	6.8	5.0	3.5	6.2	6.0
Norchip	13.6	10.6	18.2	7.0	6.2	7.6	10.5
Belchip	14.6	14.2	18.0	34.5	10.4	9.6	16.9
Average	9.7	7.4	8.7	7.2	5.4	5.7	7.4

TABLE 6. Tuber weight (oz.) for each farm. Statewide Trial-1982.

Farm	1	2	3	4	5	6	
Entry	B	TH	M	L	C	TR	Average
NY 59	5.6	6.5	5.9	7.2	-	5.1	6.1
W 718	7.4	7.9	6.6	7.3	-	5.9	7.0
Katahdin	5.5	5.5	5.6	6.2	-	5.2	5.6
Rosa	6.2	5.8	6.1	6.5	-	5.0	5.9
Neb. A129.69-1	6.1	6.7	6.9	6.6	-	5.7	6.4
Denali	7.0	6.7	6.1	6.8	-	5.4	6.4
Jemseg	7.1	7.2	7.5	7.9	-	6.2	7.2
Russette	6.4	7.4	6.8	7.0	-	5.9	6.7
Norchip	6.2	5.6	5.9	5.8	-	4.5	5.6
Belchip	7.2	7.4	8.1	8.5	-	6.4	7.5
Average	6.5	6.7	6.5	7.0	-	5.5	6.4

TABLE 7. Percent of total tubers cut showing hollow heart and internal necrosis. Statewide Trial. (Only greater than 1% shown)

Entry	H.H.	Nec.	Entry	H.H.	Nec.
NY 59	-	13.8	Denali	2.5	-
W 718	2.7	8.0	Jemseg	-	-
Katahdin	-	5.5	Russette	4.0	-
Rosa	-	-	Norchip	-	7
Neb. A129.69-1	-	-	Belchip	2.1	-

OBSERVATION TRIAL

Introduction

Twenty-seven entries were evaluated in the observation plots. Most entries are new breeding lines or varieties released by potato breeders recently.

Procedure

The procedure was approximately the same as for the main plots. The observation plots were on two of the six farms that had the main plots. Plot size consisted of double rows approximately 25 feet long (50 seedpieces). Stand, vigor, and disease were evaluated during the growing season. Harvest procedures were the same as for the main plots. Only the most promising entries were saved for chipping tests.

Results

The five highest yielding cultivars were BR 5991-WV16, BR 7093-23, CA 02-7, W 738, and AK 114. BR 5991-WV16 led in yield in 1981. It has a tendency to internal necrosis. AK 114 and BR 7093-23 had above-average yields in 1981. CA 02-7 has looked promising in some years, but had very low yields in the Statewide Trials in 1980. Other cultivars of interest include Chipbelle which has average yields, but high tuber specific gravity. Simcoe and Conestoga are early-maturing cultivars and will be tested more in Ohio. B8934-4, B8972-1, and B8943-4 are russets of the BelRus-type, but they did not yield much better than BelRus.

TABLE 8. Yield, grade, and tuber size of Observation Trial entries, 1982.

Entry	Yield (cwt/A)	% US No.1	Tuber weight (oz)
BR5991-WV16	431	91.4	5.8
BR 7093-23	392	90.4	6.0
CA 02-7	388	91.0	5.8
W 738	373	89.6	6.4
AK 114	362	87.4	5.5
Alasclear	362	85.8	5.8
AF 186-5	360	89.4	6.1
Kennebec	359	81.2	6.8
AK 28	354	90.8	5.8
ND 146-4R	346	93.4	5.2
AK 38-2	342	85.1	5.7
AK 10-1	324	81.2	6.5
Superior	319	90.0	5.9
Simcoe	318	88.0	5.4
CC 26-1A	310	84.4	6.0
Neb. A71.72-1	305	88.8	6.0
Chipbelle	304	92.1	5.8
Neb. 51-3	291	79.8	6.6
AK 13-5	273	77.6	6.9
Conestoga	266	82.7	5.4
ND 55-7	264	86.3	5.0
B 8934-4	235	79.7	6.4
Minn. 8224	234	85.0	5.8
Minn. 7973	233	80.4	6.2
B 8972-1 (Goldrus)	196	71.2	5.8
BelRus	187	74.8	4.6
B 8943-4	178	78.9	5.7

TABLE 9. Summary of percent hollow heart and internal necrosis of tubers cut. Observation Trial, 1982.

Hollow Heart

Severe	Moderate	Slight
B8934-1	MN 8224	B 8972-1
Neb. A71.72-1		AK 28

Necrosis

Severe	Moderate	Slight
	ND 55-7	AK 10-1
	Neb. A71.72-1	Alasclear
	Kennebec	BR 5991-WV16

CELERYVILLE MUCK TRIAL

Introduction

Ten entries were evaluated at the OARDC Muck Crops Branch at Celeryville in 1980. These included Katahdin as a mid-season standard.

Procedure

Plots were planted on May 13. The spacing in the plots was a double row 32 inches apart, skip 40 inches to the next double row, and seedpieces were spaced 11 inches apart in the row. Plots were a double row 25 feet long. Fertilizer was broadcast before planting at a rate of 850 lbs/A of 6-24-12. Temik was the systemic insecticide used at planting.

Plots were harvested on September 22. The tubers were graded for B's and culls. Five tubers from each replicate were cut to evaluate hollow heart and internal necrosis.

Results

NY 59, Belchip, Neb. A129.69-1, and W 718 produced the highest yields in that order. NY 59 did not show any internal necrosis in the tubers. 1982 was the first year it was in the trial on muck. Belchip had good shape and few culls on the muck. Neb. A129.69-1 has generally had low yields in this trial. W 718 had led in yield for 6 years in this trial and had an excellent yield this year. Denali has generally produced low yields on muck soils. The cultivars with the most hollow heart were Russette, 56%; W 718, 52%; Jemseg, 32%; and Neb. A129.69-1, 30%.

TABLE 10. Yield and grade characteristics of entries in Celeryville Muck Trials, 1982.

Entry	Total	U.S. No. 1	U.S. No.1	B-Size	Cull	H.H.	Nec.
NY 59	563	530	94.0	3.6	2.3	4.0	0
Belchip	505	475	94.1	2.3	3.6	0	0
Neb. A129.69-1	493	468	94.8	3.2	2.0	30.0	0
W 718	469	444	94.7	2.8	2.5	52.0	0
AK 114	500	442	88.4	8.8	2.8	0	0
Jemseg	450	423	94.0	1.9	4.1	32.0	0
Rosa	466	410	87.9	9.2	2.9	16.0	0
Katahdin	412	388	94.2	4.3	1.4	20.0	0
Denali	437	388	88.9	6.3	4.8	20.0	0
Russette	334	251	75.2	7.6	17.2	56.0	0

NORTH CENTRAL REGIONAL TRIAL

Introduction

The North Central Regional Potato Variety Trial has been conducted for its 32nd year. Fourteen states and two Canadian provinces are now cooperating in this trial. Participating plant breeders throughout the country give seed of their most promising potato selections to cooperators, and they are evaluated in each cooperating state or province. At least 35 varieties have been named after testing in this program. This program is under the direction of Robert H. Johannsen of North Dakota State University.

Procedure

Thirteen varieties and selections were evaluated in the NCR plot at Wooster. Five breeders entered 4 red, 5 russet and 3 white selections plus 5 standards. (Three selections lost to rot in seed.) Plots were single rows, 30 feet long and were replicated three times in a randomized complete block design. The plot was planted on May 14 and vines were killed on September 3. The fertilizer program consisted of 1200 lbs. of 10-20-20, half of which was broadcast before planting and the other half banded at planting.

Plots were dug on September 13 by machine and tubers picked up by hand and weighed. Tubers were graded for B's and culls and internal and external defects.

Results

Three of the five top yielding cultivars were the check cultivars Red Pontiac, Norgold Russet, and Norland. ND 534-4 Russ had the second highest yield and is an attractive long russet worth further evaluation in Ohio. Neb. A63.71-1 is an oblong russet with light color skin. ND 388-1 Russ is an oblong russet that only had average yields.

TABLE 11. Average yield, grade, and defects--North Central Regional Trial , 1982.

Entry	Cwt/A	%	Percent[1]					
			G.C.	2nd	GR	HH	IN	VD
Red Pontiac	415	78.5	2	3	2	2	0	8
ND 534-4 Russ	412	88.8	0	6	4	0	0	0
Norgold Russet	403	84.1	2	4	4	3	0	2
Norland	334	91.0	3	3	3	0	0	0
Neb. A63.71-1	334	85.8	2	6	3	2	3	14
LA 42-38	330	81.1	12	2	3	0	0	9
Neb. A71.72-1	325	82.9	0	6	8	3	4	0
ND 388-1 Russ	321	85.0	0	6	2	0	2	2
ND 55-7	316	74.1	3	0	10	3	5	0
Norchip	309	80.3	2	4	10	0	4	0
Wisc. 806R	294	87.5	2	2	2	0	4	2
Wisc. 752	217	86.4	0	2	3	0	0	4
Russet Burbank	175	59.0	5	35	0	0	3	17

1. GC-growth cracks; 2nd-second growth; GR-green; HH-hollow heart; IN-internal necrosis; and VD-vascular discoloration.

NORTHEASTERN REGIONAL TRIAL

Introduction

The Northeastern Regional Potato Variety Trial has been in existence for 7 years. The trial is composed of thirteen states in the northeastern section of the United States and Canada. Potato breeders in these states enter their more promising selections into this trial. Cooperators choose the selections to test in their state.

Procedure

Eighteen varieties and selections were evaluated in the NER plot at Wooster. Plots were single rows, thirty feet long and were replicated three times in a randomized complete block design. The plot was planted on May 14, killed September 3, and harvested September 13. The fertilizer program consisted of 1200 lbs. of 10-20-20, half of which was broadcast before planting and the other half banded at planting.

Plots were dug and tubers picked up by hand and weighed. Tubers were graded for B's and culls and internal and external tuber defects.

Results

The five highest yielding cultivars were F 73008, BR 5991-WV16, Acadia Russet, CF 7353-1, and AF 238-66. F 73008 has oblong to long tubers and yellow flesh color. BR 5991-WV16 led in yield in the observation trial. Acadia Russet has oblong to long tubers. It has generally had low yields in the observation trials. CF 7353-1 has purple color skin. AF 238-66 has oblong, white tubers and has yielded well in past trials.

TABLE 12. Average yield, grade, and defects-Northeastern Regional Trial, 1982.

Entry	Total	U.S. No.1	Percent U.S.No.1	B's	Culls	HH	Nec.
F73008	600	486	81.0	3.2	15.7	0	0
BR 5991-WV16	552	468	84.7	3.8	11.4	0	17
Acadia Russet	513	451	88.0	3.6	8.3	0	3
CF 7353-1	466	417	89.6	2.4	8.0	3	0
AF 238-66	505	408	80.7	5.1	14.2	0	0
Katahdin	440	398	90.4	1.3	8.3	0	0
BR 7093-23	443	374	84.4	2.4	13.1	0	0
Superior	423	362	85.8	3.2	11.0	0	0
CC26-1A	461	362	78.5	2.0	19.5	3	0
BR 7088-18	429	359	83.7	3.4	12.9	0	0
Denali	429	357	83.1	2.6	14.3	10	3
Norchip	446	353	79.2	4.0	16.7	0	0
MN 9319	425	342	80.5	2.8	16.7	0	0
MN 7973	396	304	76.9	2.5	20.6	0	0
AS 201-10	349	281	80.5	7.2	12.3	0	0
B 8943-4	292	205	70.1	5.2	24.7	0	0
B 8972-1 (Goldrus)	282	201	71.4	11.7	16.9	0	0
B 8934-4	307	196	63.8	7.1	29.1	3	0

RUSSET TRIAL

Introduction

Seven russet cultivars were evaluated in a trial at the Doug Michael farm at Urbana, Ohio. They were evaluated for yield, grade, and tuber characteristics. Dave Kelly evaluated this trial.

Procedure

The plot was planted on April 21. The plot received 140# N, 288# P_2O_5, 288# K_2O and 40# N side-dressed on May 27 and June 12. Seedpieces were spaced at 8 1/2 inches. The plot was harvested on September 17, weighed and graded.

Results

Russette had the highest yield and best percent U.S. No. 1 tubers. It has an oblong shape and tends to hollow heart. Allegash Russet was second highest in yield. It has had poor yields in previous trials in Ohio. B8934-4 was third highest in yield. Tubers had a wide range of shape from round to long. It yielded poorly in other tests in Ohio this year.

TABLE 13. Yield and grade of entries in russet plot, 1982.

Entry	U.S. No. 1 cwt/A	Percent			
		U.S. No. 1	B-size	Culls	Stand
Russette	354	87.5	4.0	8.4	83
Allegash Russet	339	85.8	7.9	6.2	72
B8934-4	335	79.7	8.6	11.7	69
BelRus	292	78.5	15.2	6.3	84
B8972-1 (Goldrus)	289	83.2	12.8	3.8	68
B8833-6	243	78.3	9.5	12.2	79
B8943-4	233	63.8	16.8	19.4	67

CAMPBELL INSTITUTE TRIAL

Introduction

Eleven cultivars, most of them identical with the Statewide Trial, were planted at the Campbell Institute for Research and Technology, Napoleon, Ohio. They were evaluated for yield and tuber characteristics. Richard C. Henne was the cooperator directing this trial.

Procedure

The plots were planted on May 13. There were four replications per variety. Plots were harvested on September 14. Yield, grade and tuber characteristics were measured for each cultivar.

Results

NY 59 had the highest yield, followed by AK114, Belchip, and Katahdin (Table 14). Denali had heavy scab, Neb. A129.69-1 and Norchip had moderate scab and AK114 had some scab. All other cultivars had minimal or no scab.

TABLE 14. Field evaluations of 11 potato varieties grown at Napoleon, OH, 1982.

Variety	Yield cwt/acre	Percent Marketable (over 1 7/8")	Remarks
NY 59	594	92.6	
AK 114	532	84.5	Some scab
Belchip	485	93.0	
Katahdin	476	88.5	
Norchip	456	86.0	Moderate scab
W 718	454	91.3	
Russette	453	91.3	
Rosa	441	77.9	
Neb. A129.69-1	433	84.3	Moderate scab
Denali	397	85.6	Heavy scab
Jemseg	395	90.8	

APPENDIX

TABLE A1--Origin and Characteristics of Entries (listed from highest to lowest yield).

Entry	Origin	Tuber Evaluation at harvest field comments	Grade Notes	Notes from Prior Years	Years tested in Ohio(2)	Maturity season
			MAIN TRIALS			
NY 59	NY	Wide range in size, Trace to med. scab. Shal.-med. eyes. Good Appearance.	14% necrosis in large tubers. Culls-shape & & Green. Sl. scab.	High yield. Good grades. Att. Not a chipper. Chips may blister Size may vary. H.H.	6	Late
W 718	WI	Med.-Lg. size. Good App. 2.7% H.H. & 8% Nec.	Culls-shape & green. Some growth cracks. 2.5% H.H.	High yields. May be rough. HH. Att. Low Sp. Gr. not a chipper Chips may blister. Tend large. May have low stands.	10	E.Mid.
Katahdin	1935-USDA	Med. Size. Trace-med. scab. Good appearance.	Culls-mostly Green. Some scab.	Att. Av. or above grades. Less dependable for chips than some. Plants may seem to lack vigor.	20	Mid.
Rosa (NY 61)	1980-NY	Wide range in size. Shallow-med. indent. eyes. Fair App.	Culls-Green, shape & scab. Red eyes & blotches. Fair.	Good yields. Midseason. May be small. May feather.	4	Mid.
Neb.A129.69-1	NEB.	Wide range in size. Trace-med. scab. Fairly good App. Sl.-Med. Indent. on apical end.	Culls-shape & green. No HH, but seed was full of HH.	High yields & grades. Size varies. Not a chipper.	6	Late
Denali	1978-AK & USDA	Wide range in size. Trace-severe scab. Fair Appearance.	Culls-shape & scab. Scab in every farm. 2.5% HH. Air Cracks.	Good grades. Little or no HH & Nec. Att. high yields. High Sp.Gr.	6	Late

APPENDIX

TABLE A1--Origin and Characteristics of Entries (listed from highest to lowest yield) cont.

Entry	Origin	Tuber Evaluation at harvest field comments	Grade Notes	Notes from Prior Years	Years tested in Ohio(2)	Maturity season
Jemseg (F67072)	1978-N.B.	Size varied. Med. size. Good App. Dark tan skin.	Culls-shape, green. Growth cracks.	Tends to growth cracks. May be large & rough. Should be dug early. Yields usually above Superior. Sets heavily. Chips may blister.	5	V.early
Russette (B7583-6)	1980-USDA	Russet. Wide range in size. Med.-Large size. App. poor-good.	Air cracks. Growth cracks severe. Culls also shape & some scab. 7% Nec. in large tubers & 4% HH.	H.H. problem in '80 & '81. Low yields. Tend to low stands. Growth cracks. Below avg. grades. Dark russet.	6	Mid.
Norchip	1968-ND	Tubers small. Eyes sh. to med. deep. App. fair. Wide range in size & shape.	Culls-shape & green. 7% nec.	Sets heavily. Tubers tend small. Good chipper. May be rough. Plants cannot take stress. Size & shape varies.	15	E.Mid.
Belchip (B6987-29)	1978-USDA	Wide range in size. Sl.-deep indent. of Ap.end & med. indent. of stem end. Eyes Sh. to med. deep. App. fair. Gr.cracks 2nd gr. knobs & poor shape.	Culls-shape & green. Scat at L. 2% HH.	High Sp.Gr. Rough in O. Low stands, yields and grands. Some HH. Chips. Was discarded in O. after testing in '77 & '78. Reconditions.	3	Mid.

APPENDIX

TABLE A1--Origin and Characteristics of Entries (listed from highest to lowest yield) cont.

Entry	Origin	Tuber Evaluation at harvest field comments	Grade Notes	Notes from Prior Years	Years tested in Ohio(2)	Maturity season
			OBSERVATION TRIALS			
BR 5991 WV16	488 W.VA. & ME.	Wide range in size. Trace to severe growth cracks. App. good.	Culls-growth cracks & scab. Sl.HH & Nec.	High yields.	2	Late
Alaska 114	AK	Sm.-Med. size. size. Fairly good. app.	Culls-shape, green. Scab.	Sets heavily. Tough skin. Stores well. Good grades. May get HH.	3	Mid.
CA 027	Campbell Soup & ME	Sm.-Med. size. Some scab.	Culls-shapes, cracks. Green. 2% HH.	High yields & grades. Fair chipper. May have HH & severe stem rot.	4	Late
Kennebec	1948-USDA	Med. size. Poor to fair appearance.	Culls-shape, growth cracks, scab. 2% HH 3% Nec.	High yield despite low grades. Excellent cooker & chipper. Characteristics known.	17	Mid.
Alasclear (AK 14-1)	AK	Med.size. Trace-med. scab. Sh.-med. ident. eyes. Good appearance.	Culls-shape & scab. 2% Nec.	Fair processing. Good eating.	2	Late
Chipbelle (B6987-184)	1981-USDA	Wide range in size. Med.size. Poor-good appearance.	Culls-shape & scab. 2% HH.	Can't take stress. Very susceptible to heat, drought & herbicide injury. High Sp.Gr. Chips. Much HH in '80.	4	E.Mid.
AK38-2	AK	Med.size. Trace-severe scab. Shallow to med. Ident. eyes. Good appearance.	Culls-shape & scab.		2	Mid.

APPENDIX

TABLE A1--Origin and Characteristics of Entries (listed from highest to lowest yield) cont.

Entry	Origin	Tuber Evaluation at harvest field comments	Grade Notes	Notes from Prior Years	Years tested in Ohio(2)	Maturity season
AK 28	AK	Sm.-Med. Shallow-Med. Ident. eyes. Poor-fair appearance.	4% HH. Few culls.		1	Late
BR7093-23	ME & USDA	Med.-Lg. size. Trace to severe scab. Good app. Tr.-severe Enl. Lent.	Culls-Green. Growth cracks. Scab trace. to severe.	Good yields & grades.	2	Mid.
AF 186-5	ME	Med.size. Good app.	Culls-shape & green.	Good Chips.	1	E.Mid.
AK10-1	AK	Med.size. Trace-severe scab. Fairly good. app.	Culls-scab & gr.cracks. 2% Nec.	Med. early. Chips. AK288x Snowchip.	1	Mid.
Neb. A71.72-1	NEB.	Wide range in size. Med. size. Trace-severe 2nd growth. Knobs. & shape. Tr. to med.Enl. Lent. Poor to good app.	Culls-shape & some scab. 10% HH & 3% Nec.	Long russet. Some HH. yields & grades. Sl. below Avg. Susc. to HH	2	E.Mid.
W 738	WI	Small-Med. in size. Some med. to deep eyes. Trace-severe scab. Fair app.	Culls-shape, scab. Green. Much scab.	Med. early. Good. sp.gr. Yields & Grades about Avg. Some discoloration.	4	Late
ND 146-4R	ND	Red. Med. size. Good. App.	Culls-green. Air cracks.		1	Early
Neb. 51-3	NEB.	Sm.-Lg. size. Trace to severe scab. Poor app. Wide range in size.	Culls-shape, gr. cracks Green. Sl.air cracks.	Long russet. Avg. grades & yields or below. App. mostly poor.	3	E.Mid.

APPENDIX

TABLE A1--Origin and Characteristics of Entries (listed from highest to lowest yield) cont.

Entry	Origin	Tuber Evaluation at harvest field comments	Grade Notes	Notes from Prior Years	Years tested in Ohio(2)	Maturity season
Superior	1981-WI	Med. size. Severe Enl. Lent. in 1 Rep. Trace to med. surface cracks. Fair app.	Culls-shape green, scab. Good grades usually.	High grades. Chips & cooks. Usually smooth & uniform. Plants susc. to stress.	20	Early
CC26-1A		Med. size. Trace to med. knobs & scab, Fair app.	Culls-shape, green, scab.		1	Med.
ND 55-7	ND	Wide range in size. Sm.-Lg. Good app.	Culls-shape & green.		1	Med.E.
Simcoe	1981-Ont.	Med.size. Shallow to med. ident. at both ends. Trace to med. scab. Fair App.	Few culls.	Claimed Exc. cooker & chipper. Yields below Conestoga.	1	E.Mid.
AK 13-5	AK	Wide range in size. Trace-med. scab. Poor to fair appearance.	Culls 20%. Shape, green. Growth cracks. Gr.cracks may be a problem. 3% HH.	Fair chips. Below avg. yields Rough.	4	E.Mid.
Minn. 8224	MN	Med. size. Deep eyes. Poor. app.	Culls-shape,green.		1	Med.
Minn. 7973	MN	Wide range in size. Med.-Lg. Fair app.	Culls-shape. Sl.green., gr. cracks & scab.		1	Med.E.
B8934-4	USDA	Wide range in size. Med. size. Good App.	Culls-shape-Sl.growth cracks & scab. 10% HH.		1	E.Mid.
Conestoga	1982-Ont.	Sm.-Lg.-Av. med. trace to med. scab. Shallow-Med. Id. eyes. Fair app.	Culls-Sh., green. crack scab & gr.cracks severe in some reps. 2% HH.	Early Vigor. High yield for early variety.	1	V.Early

APPENDIX

TABLE A1--Origin and Characteristics of Entries (listed from highest to lowest yield) cont.

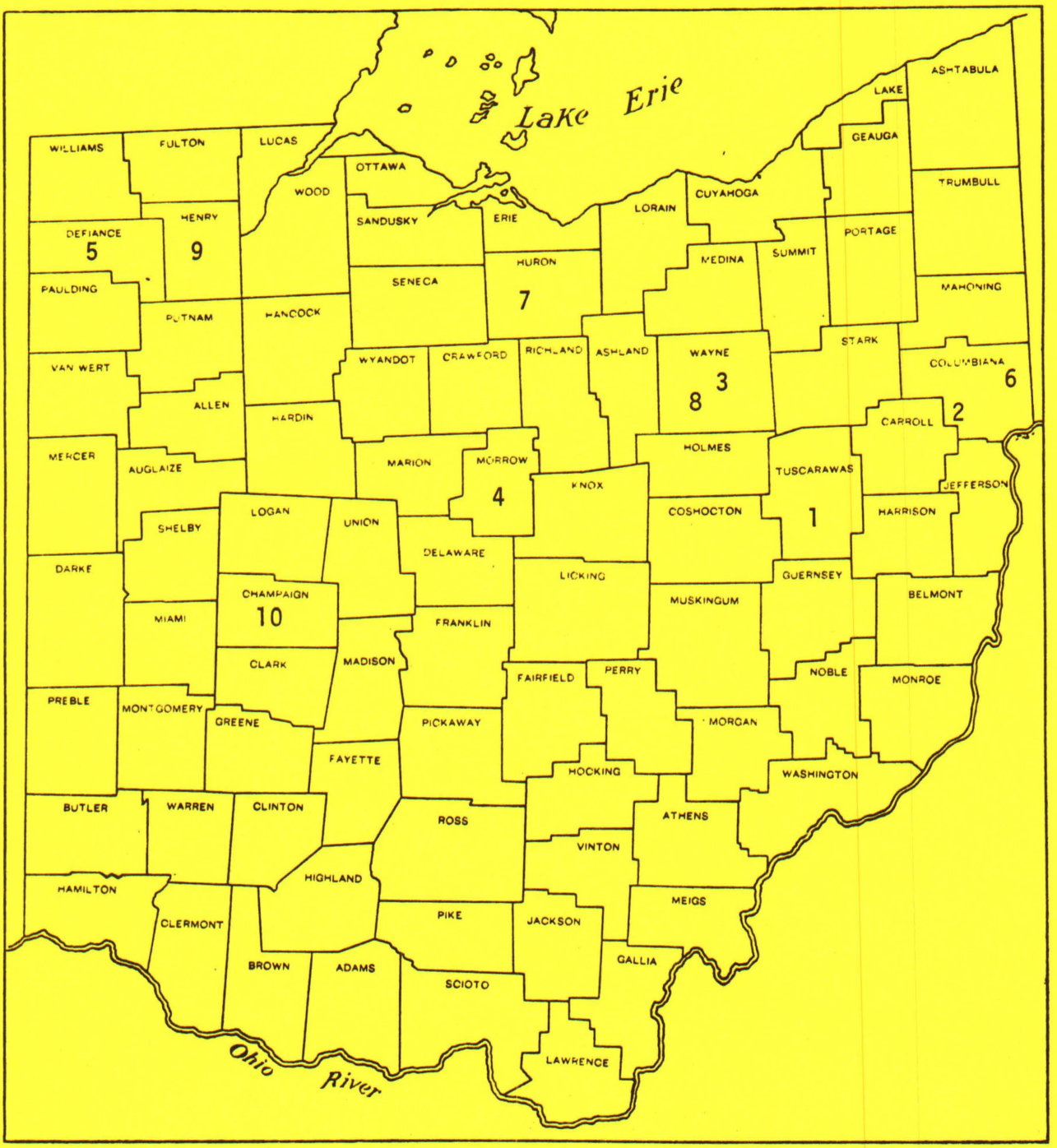
Entry	Origin	Tuber Evaluation at harvest field comments	Grade Notes	Notes from Prior Years	Years tested in Ohio(2)	Maturity season
B8943-4	USDA	Med. size. Fair app. Some scab.	Culls-shape. Green. Gr. cracks.		1	Early
BelRus	1978-USDA	Sm.-Lg. Av. med.size. Poor App. Russet.	Culls-Cr. Shape.	Long nice russet. Very low yields.	4	Early
B8972-1 (Goldrus)	USDA	Sm.-Med. Good app. Wide range in size.	Culls-shape, cr. 5% HH		1	Mid E.

TABLE A2. Cultural and Pest Control Methods - Ohio Potato Variety Trials, 1982.
(Initials of growers in parenthesis)

	Farm No.					
	1 (B)	2 (TH)	3 (M)	4 (L)	5 (C)	6 (TR)
Date Planted	5/10	5/14	5/12	5/12	5/19	5/17
Date Killed-Chem.Appl.	9/22 (Shred)	8/30 (1st light) 9/6 (2nd heavier)	9/15	9/15	9/9	9/10 (1st spray)
Date Harvested	9/24	10/5	10/13	9/30	10/1	10/6
No. days-plant. to kill	135	115	126	126	113	116
No. days-plant. to harv.	137	141	154	141	135	139
1981 Crop	Potatoes	Wheat	Wheat & Clover	Soybeans	Potatoes	Wheat
Cover crop plowed down	Rye	Clover & Timothy	Clover	None	None	Straw & Timothy
Fertilizer, #/A plowed down	400 # 12-24-24	40# N		0-50-100		
In-row at planting	500# 12-24-24	850# 14-16-20	1100# 15-15-15	2000# 5-10-10	1700# 19-19-19	1000# 10-20-20
Side-dressing	200# 12-24-24 + 100# Urea at lay by			25# N		
Herbicide	Sencor before emergence	Eptam, inc.	Sencor & Dual later	Eptam Lorox later	Dual, inc. Dual-Sencor later	Eptam, inc.
Systemic insecticide	Furadan		Furadan	Temik 17-18 lbs.	Furadan	Furadan
Spacing	9 1/2 x 34	9 x 36	10 x 34	10 x 34	10 1/2 x 36	11 x 32
Soil type	Sandy silt loam	Silt loam	Silt loam	Silt loam	Sandy silt loam	Wooster silt loam
Soil condition	Good	Good	Good	Good	Good but dry	Good

TABLE A3. U.S. No. 1 yields in cwt. per acre for selected major entries in the Ohio Potato Variety Trials, 1982. Grown for more than one year in the last ten years.

Entry	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Early & Med. Early										
Jemseg									207	294
Superior	287	266	273	342	248	256				
Early Midseason										
Crystal					256	348	425	273	254	
Atlantic					374	309	414			
W 718			371	385	360	299	386	296	311	388
Norchip	292	297	272	273	262	252	309	201	231	337
Rosa (NY61)										327
Midseason										
Snowchip	310	305	327							
Katahdin	283	301	336	319	320	255	346	267	292	374
Kennebec	280	362	321	343						
Late										
Denali								316	269	300
NY 59									324	373
Neb. A 129.69-1								320	336	341



LOCATIONS OF 1982 OHIO POTATO VARIETY TRIALS

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